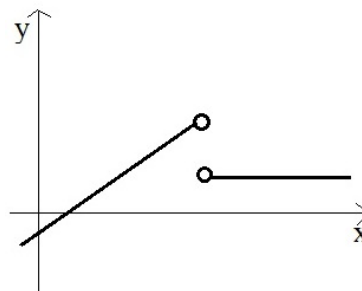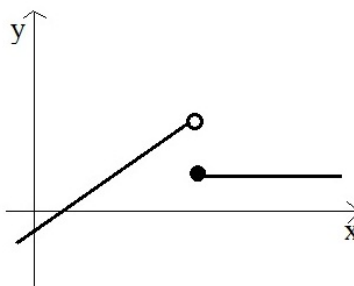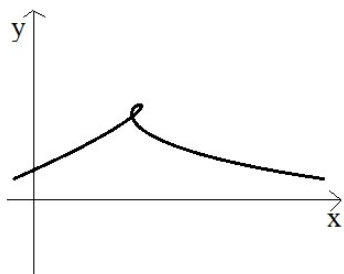# Math 115
Worksheet Section 1.1

1.   1. Which of the following objects represent functions?

   the rule that sends every non-zero number to its square and sends 0 to 1

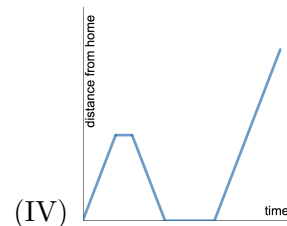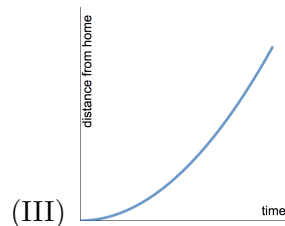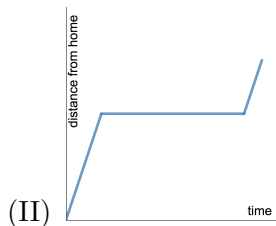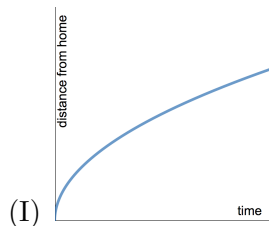   the rule that sends every number to 42

x	y
1	5
1	2
2	3
3	4

x	y
1	5
2	3
3	3
4	1

$y = x^2$

$x^2 + y^2 = 1$

   2. So what exactly is a **function**?

2. Which graph best matches each of the following stories? Write a story for the remaining graph.

   (a) I had just left home when I realized I had forgotten my books, so I went back to pick them up.

   (b) Things went fine until I had a flat tire.

   (c) I started out calmly but sped up when I realized I was going to be late.

(I)   (II)   (III)   (IV)

3. Residents in the town of Maple Grove who are connected to the municipal water supply are billed a fixed amount monthly plus a charge for each cubic foot of water used. A household using 1000 cubic feet was billed $40, while one using 1600 cubic feet was billed $55.

   (a) What is the charge per cubic foot?

   (b) Write an equation for the total cost of a resident's water as a function of cubit feet of water used.

   (c) How many cubic feet of water would lead to a bill of $100?

4. Match the graphs in the figure with the following equations. (Note that the x and y scales may be unequal.)

   (a) $y = -2.27x$

   (b) $y = 20.01 + 1.01x$

   (c) $y = 27.9 - 0.1x$

   (d) $y = 0.1x - 27.9$

   (e) $y = -5.7 - 200x$

   (f) $y = x/3.14$

(I)

(II)

(III)

(IV)

(V)

(VI)